HEALTH

EDITED BY

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

IT may not be inappropriate if, in concluding the Old Year, we refer to the prospective arrangements connected with the programme of HEALTH in 1884. Adhering strictly to the lines on which the journal has hitherto been conducted—namely, those of uniting sound instruction in health-science and sanitary laws to details which are interesting and useful to all—we anticipate presenting our readers with a programme in which the varied features of HEALTH will be even more fully extended than in its past career. Each of the departments under which our topics have from week to week been treated will receive original contributions by writers well known in connection with the subjects with which they deal. Amongst the features of HEALTH for 1884 will be comprised "Our Ambulance Lectures," fully illustrated, and written by the Editor, assisted by various physicians and surgeons. These papers, dealing with the treatment of emergencies, and showing how the public may render "first aid" to the wounded and injured, will prove useful as an educative basis for teaching the plain and simple details of home-medicine to old and young alike. Mrs. Thwaites, of the Liverpool School of Cookery, will contribute a series of papers on "Cookery and Foods in Relation to Health." Such articles will be thoroughly appreciated, we believe, in every home, and will teem with information of directly useful kind.

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ARRANGEMENTS have also been made for the publication in our pages of a series of papers on popular science, by Dr. Riches. These articles will deal with such topics as Sound, Light, Heat, Air, &c., in relation to the senses, and to health topics. They will thus continue under a new aspect the papers on "The Body and its Structure," which have already appeared; while special articles in direct continuance of the papers on anatomy and physiology will be duly written for HEALTH by Mr. Manson, Mr. Clarke, B.Sc., the Editor, and others. A series of papers on "Home Exercises and Calisthenics" has been promised us by Mr. H. C. Standage, for the "Recreation" page; while Mr. G. Chisholm, M.A. B.Sc., will deal in early numbers with the all-important topic of "Examinations in their Relation to Health"; Dr. Baird's papers on "Infancy"; those of Dr. Chapman on the "Common Ailments of Children"; and Dr. Drinkwater's articles on "Foods and Food-Adulteration" will also appear in due course. Miss Ballin will write articles on "Children's Food" and allied topics; while our contributors, Drs. Stone, Foster, Cathcart, Nasmyth, and Ross, and other writers, have also promised a continuance of their welcome aid. The Editor contributes to early numbers a series of papers on "The Brain and Its Work," and it may be added that the "Original Essays" will deal, as heretofore, with whatever topics of special interest the times bring round.

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WITH this large and varied programme before us, we have every confidence in again asking the kind co-operation of our readers in still further extending the circulation of HEALTH. It shall be our constant endeavour to make the journal a source of sound and reliable information, popularly imparted and plainly detailed. As a "family friend" and consulting medium on all matters pertaining to health, we have reason to believe this journal has already acquired a firm footing; and we ask those who have found in HEALTH either profit or pleasure, or both, to commend our efforts to the notice of their neighbours and friends.

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WE are glad to observe that the "Edinburgh Health Lectures" for the present year—the fourth series—are once more being published by Messrs. Macniven & Wallace, of that city. We commend to the notice of all interested in ambulance-work, and in health-instruction at large, the opening lecture by Professor Chiene, of Edinburgh, on "Civic Sanitation."

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THE "Manchester Health Lectures" are being published by Mr. John Heywood, as before. Dr. Ransome's lecture on "Breathing," forming the first of the series for 1883-84, is a capital exposition of the great purifying function of our frames. The lecturer, in a singularly happy fashion, shows the value of pure air, and the danger of the "breath re-breathed."

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WE beg to draw attention to the "Department of Hygiene and Public Health" of University College, London, under the able supervision of Professor Corfield and Mr. C. E. Cassal. Those who desire a complete course of instruction in sanitary science, and in all the details of personal and public health, will find Dr. Corfield's course an admirable means for acquiring such culture. The "General Course" is given on Tuesday and Thursday, from 4 to 5, during the summer session, beginning in May; while the laboratory is open daily from 9 to 4 from October to the end of the summer session.

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A FULL and complete reply to the arguments which maintain that the cry of educational "overwork" is exaggerated and needless will be found in a pamphlet by Mr. Teale, of Leeds (published by Messrs. Simpkin, Marshall, & Co., London), entitled "Hurry, Worry, and Money—the bane of Modern Education." Mr. Teale, who, from his high position as a medical authority, is fully entitled "to speak with power," adduces unanswerable arguments to show that we are in danger of becoming "examination-mad" in these latter days, and that our only hope of fulfilling the ends and aims of true education is to throw "cram" to the winds. We commend Mr. Teale's pamphlet to the notice of every teacher and parent.

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REFERRING to our remarks in last week's HEALTH on Dr. Mortimer Granville's contention that the use of night-caps is to be commended, a medical friend writes that as the brain is supplied with blood by different blood-vessels to those which nourish the scalp, it is difficult to see how cold or warmth, of the slight degree prevented or induced by the night-cap, can so seriously affect the brain as is

maintained by the medical authority just named. It is true, however, that the effect of cold on the blood-vessels of the scalp might also be represented in those of the brain; but as this is a result which is likely to accrue every time a hat is removed, the chances of its doing harm are seen to be practically of none effect. Dr. Granville's "night-cap theory," will not, we are afraid, stand scientific criticism. This much, at least, is certain, that there are thousands of persons who exhibit the most perfect health, and who have been innocent of night-caps from infancy upwards.

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The "English Spelling Reform Association," 8, John-street, Adelphi, London, has issued a circular protesting against "the intricacies of English spelling," and advocating the simplification of the present method of constructing words as a means of advance in education. There certainly seems room for reform in this direction, but alteration in the spelling of words is a rather serious matter. It seems doubtful if the work at which the association aims can ever be successfully carried out by English-speaking nations at large, although everyone must feel a pang of sympathy for children in their spelling lessons, as for the foreigner of the story, who, puzzled with the varied sounds of the terminal "ough" in English, rendered, naturally enough, the words "the earth being so tough, the plough could not get through," as "the earth being so tough the *pluff* could not get *thruff*."

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Some discussion has taken place between Dr. Allchin and Mr. John Angell, of Manchester, regarding the value of physiology as an educational subject. Dr. Allchin expressed the idea that physiology was valueless as a subject of elementary education. He founded his ideas, we believe, on the hopelessness of teaching the facts of science in a sufficiently clear fashion to the young. Mr. Angell, who is Science Master in Manchester Grammar School, took the opposite view, and in a paper read before the College of Preceptors (and published in the *Educational Times* for Dec. 1, 1883), combatted with great vigour Dr. Allchin's opinions. Only those who have taught physiology to boys and girls can speak with authority on this subject; and, as we have before shown in Health, we maintain as a sound opinion, that it is possible to teach an intelligent boy or girl, by aid of abundant illustration, all the broad facts of bodily structure and function that bear on ordinary health-questions.

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We repeat that we have never found the slightest difficulty in obtaining evidence, after strict examination, that lads and lasses may learn very thoroughly as much of the structure of the body and as much knowledge of its functions as fits them for understanding clearly and intelligently such vital matters as the nature of breathing, the nature of foods and digestion, the circulation of the blood, the work of the muscles, &c. If Dr. Allchin's views were correct, we might at once give up health-lectures, and every other form of popular scientific instruction. Boys and girls are naturally interested in science; and they are by no means so stupid, nor are teachers so unsuccessful as physiological teachers, as Dr. Allchin would have us believe.

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Dr. Andrew Wilson's second lecture at Princes' Hall, Piccadilly, London, will be given on Monday night, December 31, at 8 p.m. Subject: "How We Move—Joints and Muscles." His third lecture, on "The Heart," will be given on Wednesday evening, Jan. 2, 1884, at 8 p.m.; and his fourth and last lecture, on "Brain and Nerves," on the evening of Saturday, Jan. 5, 1884.

Original Essays

"Life is not to live, but to be well."—*Martial.*

SCIENCE AND CRIME.

THIRD PAPER.

One of the most celebrated cases in which the aid of science proved of the utmost help in settling a question of identity, and in tracing a crime home to its author, was that of Dr. Parkman, of Boston, U.S. This gentleman, a physician of standing, was traced, on Nov. 23, 1849, to the laboratory of a Professor Webster, a lecturer on chemistry, of that city. Thereafter, all traces of Dr. Parkman were lost, and the excitement regarding his fate became intense. It would appear that certain pecuniary transactions had taken place between the two persons just named, that Webster was considerably in Parkman's debt, and was, moreover, in embarrassed circumstances. On Webster's laboratory and its precincts being searched, the haunch-bones, the right thigh, and the left leg of a human body were discovered. Associated with these remains, were several laboratory towels bearing Webster's name. In the refuse and slag of a chemical furnace, were found fragments of bones of the skull and of the spine-bones, along with the blocks of artificial teeth and a little melted gold. A further search in the laboratory, brought to light a tea-chest in which, disposed among tan, and covered over with mineral matters, the trunk of a human body along with the left thigh were contained. These latter parts and the remains previously discovered were found to belong to one and the same body. Pieced together, these relics showed that they formed part of a body of which the head, arms and hands, both feet, and the right leg from the knee to the ankle were missing, but which at the same time corresponded with the frame of the missing man in every particular. Dr. Parkman, at the time of his disappearance, was sixty years of age. The examination of the skeleton pointed to its being the remains of a man of about the age referred to. Parkman's height was 5 ft. 11 in., and the skeleton pieced out and proportionately measured was found to indicate a height of 5 ft. 10½ in. In these points, therefore, the identity of the remains seemed to be clearly shown.

But, as in the case of Caroline Walsh, there were special points in Dr. Parkman's case which served to place the identification well-nigh beyond a doubt. It was quite evident that an attempt to destroy the head by fire had not only been made, but had well-nigh succeeded. The evidence of Dr. Keep, the missing man's dentist, came to the rescue in a very remarkable fashion, after an examination of the remains of the artificial teeth which had escaped the action of Webster's furnace. Keep's evidence was, that four years before the disappearance of Dr. Parkman, he fitted artificial teeth in blocks for that gentleman in both upper and lower jaws. The dentist could also speak with certainty to seeing these teeth in Dr. Parkman's mouth about a fortnight before his disappearance, when he had fitted the teeth with a new spring. The artificial teeth rescued from Webster's furnace were sworn to by Keep as those he had made for Dr. Parkman from their fitting the moulds in which the teeth of the latter had been made, and from peculiarities of make. The left side of the lower jaw of Dr. Parkman exhibited a certain irregularity, which was recognised by Keep in the form of the gold plates recovered from the furnace of Webster. Other circumstances combined to weave the evidence strongly around the latter as the perpetrator of a heinous crime. That the remains had not been used

for anatomical purposes, was abundantly proven by medical evidence; and that murder had been committed, was evident from an examination of the chest, which revealed a wound on the left side. Webster was duly convicted by a chain of circumstantial evidence of the most complete kind, and was executed. As an eminent authority in matters medico-legal has remarked on the Parkman tragedy, even the refinements and appliances of science may fail in the attempt to destroy a body, or so to mutilate it as to prevent its identification.

In 1814, one Auguste Dautun was murdered in Paris by his brother. Next day some boatmen found a human head in the Seine, while other parts of a body were found in different places on the same day. The question of identity arose as usual. Dautun was known to have been lame, one leg being shorter than the other. After a prolonged examination of the relics, the medical examiners testified that, when a child, the man must have had hip-joint disease of both sides. The study of the bones further showed that the disease had left a high degree of deformity, so that the individual whose remains were thus found, must have walked in a peculiarly contorted manner. The right limb was found to be shorter than the left, and the whole examination of the remains pointed clearly enough to the identity of the murdered man with Dautun. The presence of a wart on the face also assisted the examiners and police in their identification of the body. In the famous Greenacre case of 1837, wherein a woman, Brown, was murdered by Greenacre, and wherein various parts of the body were found at different times and in different parts of London, the fragments, when pieced together, were found to fit and to correspond in the most exact manner.

The more recent Wainwright case (1875) showed how patiently and skilfully a murderer might be tracked through the investigations of medical science. Here, the alleged victim had disappeared a year previous to the discovery of the crime. When the mutilated body was discovered in Wainwright's possession, it became necessary to show some relation in nature between the remains and the appearance, age, stature, &c., of the alleged victim, Harriet Lane. The body was partly converted into the *adipocere* mentioned in a previous article; but the medical evidence showed that it was that of a woman about five feet high and about twenty-five years of age; while other circumstances, fully investigated by the examiners, tended to bring the crime home to the prisoner, after a long and most complicated trial. After being eleven years buried, the body of a widow, Honet, was exhumed for legal purposes in France, and was duly identified. It was reduced to a skeleton; but the identity of the body was assured from the medical examination testifying to the age, height, &c., of the deceased; while a small ring, "carved in facets," which still remained on the finger-bones, added another link to the chain of evidence against a criminal.

As in the case of Dautun, peculiarities of the bones often serve as important and trustworthy means of identification. A twisted spine and deformed leg-bones served to identify a body after three years' disappearance.

In the course of the investigation of a body found buried in a sea-beach, the medical examiners discovered that the lower portion of the spine was diseased, and from the nature of the lesion they were enabled to state that the individual in question must have walked with a marked peculiarity of gait. This clue, patiently followed up, showed that the skeleton was that of a carter, who had been deformed, and who was buried at night in the sand by his friends to avoid the chances of his body being stolen for anatomical purposes by the "resurrectionists" of his day. A similar case is related by Orfila, the celebrated continental expert, in which a man named Bonino, residing near Montpellier, suddenly disappeared in 1823. In 1826 certain suspicions attaching to the disappearance induced the authorities to examine the garden of one Dimont, with the result of discovering the bones of a human body. Bonino was well known to have laboured under a six-fingered deformity in the right hand, and to have possessed six toes on the left foot. The two smaller toes of the left foot were missing in the otherwise perfect skeleton; but on the fifth toe a surface or hollow, to which an additional toe could have been attached, was plainly discernible. In the right hand the bones of the sixth finger were absent, but the palm-bone supporting the little finger exhibited the appearance of having given support to an extra digit. The left hand and right foot were complete and entire. This evidence, supported by collateral circumstances, told against Dimont and a woman, his partner in the crime, and both suffered the extreme penalty of the law.

A list of cases in which medical science, aided by the practised and trained common sense of experts, has elucidated many of the apparently inexplicable problems and mysteries of crime, might be indefinitely prolonged. But it may be remarked that not merely in the case of lost and missing persons does the knowledge of the expert aid the cause of justice. It may happen that in cases involving the identification of the living, the final appeal is made to the medical jurist and to scientific knowledge, in deciding upon the changes of structure or appearance which may accompany and mark the varying epochs of human life. Cases have been recorded in which the examination or mere detection of a scar has settled the vexed question of identity, and has freed an innocent man from the perils of unmerited punishment. Such an instance occurred at the Old Bailey in 1834. A man, believed to possess the name of Stuart, was charged with being a returned convict, and with having escaped from transportation. Evidence was given that in 1817 a person of that name was convicted and sentenced. The governor of the gaol in which the convict Stuart was confined, testified to the identity of the prisoner at the bar with the convict, and no less certain was the guard of the convict-hulk to which Stuart was consigned that the Old Bailey prisoner was his former charge. Cross-examined on behalf of the prisoner, the guard admitted that the convict Stuart in 1817 possessed a wen on his left hand, and, indeed, this peculiarity was duly entered in the convict records as a distinctive mark of the person in question. In answer to the charge preferred against him, the prisoner stated that he was not the convict Stuart, and that his name was Stipler. Between 1817 and 1834, however, witnesses who might have testified to the truth of his statement had disappeared, and were not forthcoming for the defence. Already the Recorder was prepared to charge the jury, when a singular, and, for the prisoner most fortunate, incident occurred. A celebrated surgeon of the day, Mr. Carpue, happened to be seated in Court during the trial of the alleged Stuart. Struck with the evidence of the guard of the convict-hulk regarding the presence of a well-marked wen or tumour on the convict's hand, it occurred to Mr. Carpue that this fact could be turned to advantage in the cause of justice. Hurriedly consulting with the counsel for the defence, Mr. Carpue entered the witness-box. He testified, as a surgeon, that the removal of such a wen would entail the presence of an indelible scar as the result of the operation. If the prisoner were Stuart the convict, argued the counsel, either the wen or the scar should be found on his left hand. Both hands of the prisoner

were found to be free from wens and from scars alike, whereupon the jury at once acquitted him. In this case, a chance accident and the acuteness of the surgeon may be said to have saved an innocent man from a lengthened period of incarceration.

The well-known case of Joseph Lesurques, whose misfortune forms the incident on which more than one melodrama and novel has been founded, has recently been brought anew under public notice through Mr. Henry Irving's performance in the "Lyons Mail," and his assumption of the dual *rôle* of Lesurques and his villanous double. The case actually occurred in France in 1794, and its details are sufficiently well known to obviate the necessity for their repetition here. Charged with robbery and murder, the innocent Lesurques was recognised, identified, and sworn to, as the real culprit by various disinterested witnesses. Notwithstanding strong exertions which were made to save his life, and despite his previous high moral character and probity of conduct, Lesurques was sentenced to death and executed. Soon afterwards, the real culprit, a man, Dubosc, who bore the closest possible likeness to Lesurques, was brought to justice. It was then seen that the similarity in features, stature, build, and manner was so close as to have deceived the witnesses who gave evidence at the trial. On these grounds alone, and as a matter of common recognition and identification, the unfortunate resemblance of Lesurques to the real culprit had unwittingly led them into a "Comedy of Errors," which resulted in a legal tragedy as its *dénouement*. But more extraordinary to relate still is the incident, well-nigh unparalleled in the annals of coincidences, that *Lesurques was marked by a scar on the forehead, and by another on the hand, whilst the real criminal, Dubosc, likewise possessed similar markings.* Surely "the grim irony of Fate" could no further go than this, in causing chance likeness to assume a form and to entail consequences so fatal and sad as in the case of Joseph Lesurques.

COTTAGE HOSPITALS.

THEIR FURNISHING.

By G. A. Gibson, M.D., D.Sc., F.R.C.P.E.

SEVENTH AND CONCLUDING PAPER.

The nursing arrangements will require the exercise of great circumspection. In a Cottage Hospital with no resident medical officer the nurse will require to be equal to any sudden emergency, and to have sufficient strength of character to act oftentimes on her own responsibility. There is no superintendent; she will therefore need to be a woman of methodical habits. There is no housekeeper, and on this account she must be able to attend to household duties. It is clear that the nurse of a Cottage Hospital has to fill a post of great importance and to perform duties entailing the exercise of considerable powers of mind and will.

In England the nursing arrangements of several large general hospitals are in the hands of sisterhoods; and the question has been raised whether the nursing of Cottage Hospitals should or should not be entrusted to similar associations. The advantages of such a system are but few—the objections very numerous. The presence of any member of a sisterhood in a cottage hospital would destroy its special character, import an ecclesiastical element apt to engender strife; and, if the garb be like that of a certain Church hospital in London, its wearers would seem, in the patients' eyes, like ushers of the King of Terrors. Such are a few of the lines of argument against sisterhoods as nursing institutions; and, in leaving the subject, we would quote Miss Nightingale's appropriate words:—"Take it which way you will, the idea of the religious order is always more or less to prepare the sick for death; of the secular, to restore them to life, and their nursing will be accordingly."

The question must be put, "What are suitable cases for admission?" The great rule must be *that no infectious cases are to be allowed into the hospital on any pretext whatever;* next in importance, and of almost equal weight, is another—that no obstetric (*i.e.* midwifery) cases be admitted. Deviation from the former regulation may cause the loss of useful lives; neglect of the latter may rob a home of its happiness, and leave a widower and motherless children. We were recently alarmed by a rumour that the people of a busy Scottish town, which is as well known for its manufacturing triumphs as for its staunch adherence to progressive views, proposed to erect a small hospital to accommodate medical, surgical, obstetric, and infectious cases. We shall not reveal the name or neighbourhood of this town, as we do not desire to make the proposers of this idea a scientific laughing-stock; but we would beg their attention, if Health should ever be read by them, to some wise and grave words of Mr. Simon, who says "that the deaths which occur in this country are fully a third more numerous than they would be if our existing knowledge of the chief causes of disease were reasonably well applied throughout the country; that of deaths, which in this sense may be called preventable, the average yearly number in England and Wales is about 120,000; and that of the 120,000 cases of preventable suffering which thus in every year attain their final place in the death-register, each unit represents a larger or smaller group of other cases in which preventable disease not ending in death, though often of far-reaching ill effects on life, has been suffered. And while these vast quantities of needless animal suffering, if regarded merely as such, would be matter for indignant human protest, it further has to be remembered as of legislative concern, that the physical strength of a people is an essential and main factor of national prosperity; that disease, so far as it affects the workers of the population, is in direct antagonism to industry, and that disease, which affects the growing and reproductive parts of a population, must also in part be regarded as tending to the deterioration of the race."

This leads us to make one or two remarks upon what has been called "Hospitalism." It is a well-known fact that in the larger town hospitals the mortality after the greater operations is considerably higher than in the smaller country hospitals. We cannot stay to investigate the causes of this difference, but, although we cannot claim for ourselves that we are devout believers in bare statistics, it is only fair to let the reader have the percentages of death in the two sets of hospitals after *all* amputations. In England generally, in the large general hospitals the mortality has been 41·6 per cent.; in Scotland, 38·7 per cent.; and in Paris, 58·8 per cent.; giving an average mortality of 49·7 per cent. In the Cottage Hospitals, on the other hand, 61 in number, with a total number of 326 amputations on record, there have been 58 deaths, or 17 per cent. The only remark we shall make upon these statistics is that while the figures referring to the larger

Why Burn Gas?—Adopt Chappuis' reflectors. They supersede gas in daytime, and promote health, comfort, and economy. They are now in great use in private houses. For prospectus address two stamps to (H.) Chappuis, patentee and manufacturer, 69, Fleet-street, London.—[Advt.]

hospitals are taken in some instances, at least, from the records of more than a century, the figures representing the mortality of the Cottage-Hospitals belong to the last twenty-five years only. The surgery of to-day is not quite the same thing as that of a hundred years ago, and this may to a certain extent account for the difference in results, but not for nearly all. Any reader who wishes full information on this aspect of hospital experience will find ample material for careful reading and reflection in the writings of Sir James Simpson, Mr. Erichsen, and Mr. Burdett.

Before taking leave of our subject we would once more return to and strongly urge the point of making the Cottage Hospital as homelike as possible. The relations and friends of the patients should be allowed to visit them as freely as is consistent with their condition of health. The inmates should be encouraged to every form of innocent amusement, and the men must be allowed to smoke if they are, as is probable, votaries of the Virginian weed.

Judging from the extent to which the Cottage Hospital movement has grown in the last five-and-twenty years there is no reason to doubt its continuous increase, and most certainly among the many schemes of usefulness which engage the attention of the benevolent none deserves their sympathy and help more than the erection and support of Cottage Hospitals.

HOW TO BECOME THIN OR FAT.

By a Surgeon to Several Metropolitan Hospitals.

TENTH PAPER.

Before commencing the *treatment* about to be recommended, the medical man should, as already insisted on, be quite sure of the vital capacity of the individual to adopt the plan during such time as may be necessary to produce a permanent change in the fat-forming power of the patient, or, in some cases, for life. He should not attempt any rash or hurried treatment, as this is sure to lead to ill results, and may even be fatal. He will be guided by the age, sex, constitution, and past history of the individual, and must satisfy himself that the power of the heart and the functions of the great excretory organs (or those which get rid of waste—lungs, skin, and kidneys) are in good condition. The patient should be weighed each week, and the practitioner must be alive to the fact that though patients are losing fat sufficiently quickly, still their weight may not sensibly diminish in the early period of treatment, because, as the muscles acquire tone and solidity, they will, to some extent, compensate in weight for the loss of weight in fat.

If the plan recommended be judiciously applied, its beneficial results are quickly apparent, and the individuals soon declare themselves to feel different beings, which they actually are becoming. The chief objects he will aim at are to treat each case on its merits and according to its circumstances and requirements; and if he has seen much of hospital practice, he cannot fail to be struck with the comparative rarity of obesity among the poor, while it is common among the middle and upper classes, so that two important factors in the production of obesity are at once made clear to him—viz., too much and too rich food, and too little exercise, neither of which is it in the power of the poor to procure. Every one must have observed how very rare it is to find a fat soldier or sailor,* and doubtless there are predisposed individuals in the thousands who make up the rank and file of our army and navy. This proves that moderation in the quantity of food, combined with regular exercise, are the important factors in keeping good bodily proportions.

The diet of the patient is a very essential part of the treatment, thought it alone cannot, as far as my experience guides me, be relied on, and one is obliged to call in the aid of surgical and medical means. The dietary which I recommend *differs entirely* from that of all previous writers. I allow, according to the condition of the patient, anything and everything, but I limit it in *quantity* according to circumstances. All previous writers have debarred certain articles; but I see no necessity for this—rather the reverse, as people soon tire of the monotony of specific articles of food, so that the treatment has to be abandoned. The quantity should be sufficient for healthy sustenance of the body, and this will vary in different individuals. The diet must be *mixed*, though those articles known to favour the production of fat should, of course, be allowed in limited quantities, which can only be arrived at by accurate observation of each individual undergoing the treatment. It will be found that one particular article of food—say, for instance, potatoes—will agree with one person, *i.e.*, will not make him fatter, while it will disagree with another; and the explanation of this must reside in some peculiarity of the chemistry of this individual's digestive process. Matters like these are only learned by observation and experience, and it is useless to write down any hard and fast rules on the matter. But, as it is necessary to show the lines on which I guide the dietetic treatment, I will formulate a dietary as follows, premising that I wish it to be clearly understood that only small quantities, just sufficient for bodily sustenance, are to be taken at each meal, and that the breakfast and dinner may be partaken of on a more liberal scale, proportionately, than the lunch. Every fat person should leave off eating before he or she feels satisfied; and this, by the way, is a good rule for average folk who wish to preserve their digestion and have a healthy appetite for the ensuing meal.

The patient should be allowed three meals daily, viz., breakfast, lunch, and dinner, or, if dinner be the mid-day meal, the supper should be taken at eight o'clock. If work requiring much use of the brain and a clear head has to be done, the breakfast and lunch must be moderate. The golden rule for fat people is only to half-satisfy their appetites, and to leave off when feeling as if more could be taken. They should commence by taking half the quantity they have been accustomed to take, and in ordinary cases habit will soon render this limited quantity agreeable.

* Fat policemen are not uncommon sights—a result due to the lack of *active exercise* which prevails as a rule in the force.—[Ed. H.]

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[Advt.]

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

West Green, Tottenham, West Green College for Ladies.—The Principal, Miss Bristed, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. Miss Bristed's pupils have been very successful in the local University examinations. Good garden and tennis-court. Prospectus on application.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HOW TO KEEP WARM.

By Philip Foster, M.D.

(Author of "What to Do in Accidents and Sudden Illness," &c. &c.)

Upon a due maintenance of the heat of the body not only our health and comfort, but also our freedom from disease and length of life in a great measure depend. In accordance with the law of radiation, whenever the surrounding atmosphere is of a lower temperature than ourselves, which is usually the case in England, we give off heat. Evaporation, or the conversion of fluid into vapour, which is constantly taking place on the surface of the body, although in cold weather we are not sensible of the fact that we perspire, is also attended with loss of heat. As there are two ways in which heat is lost, so are there two in which warmth may be promoted. One is by increasing the amount of heat produced; the other by limiting its escape.

The generation of heat by the body is almost entirely due to chemical changes going on within it, and depends upon the quantity and character of the food taken, the exercise undergone, and the state of the health. The fact that milk, the food provided for us by nature, contains an excess of the heat-producing elements, carbon and hydrogen, which, by combining with the oxygen taken into the body by the lungs, develop heat, shows us that keeping the body warm is really a more formidable work than nourishing it, and that a highly nutritious diet is a bad diet. Fat, butter, olive and other oils, the fatty matter in the different grains and legumes, sugar, sago, arrowroot, tapioca, and the starch contained in wheaten and other flour, in rice, potatoes, and the like, are hydrocarbon compounds, or fuel food, and the colder the weather the more are they required, and the more freely should they be consumed. The following table shows how far the different classes of food are capable of meeting this need:—

Table.

The figures represent the number of parts to the hundred the remaining parts being water:—

	Flesh-formers.	Heat-producers.	Minerals.
Beef	19	12	4
Peas (dry)	23	60	3
Oatmeal	16	69	3
Fish	14	7	1
Flour	11	69	1
Rice	7	91	1
Milk	4	8	1
Potatoes	2	23	1
Carrots	1	12	1

Malt, owing to the presence in it of diastase, is capable of digesting starch, and therefore the various malted foods which have recently been introduced may be taken with advantage by persons who experience difficulty in maintaining their animal heat. The saliva has been supplied to us for this important purpose, and should not be wasted by expectoration. Spices, by stimulating the system and increasing vital action, cause development of heat. Hot drinks, of course, add directly to the heat of the body. Exercise is a most important heat-factor—by increasing the breathing, it causes more oxygen to be carried into the body for the carbon and hydrogen to combine with; by improving the appetite, digestion, and assimilation, it increases the quantity of food appropriated, that is, converted into blood; by causing the vital functions to be carried on more vigorously, it increases chemical action, upon which the generation of heat depends; and it also causes the blood to circulate more powerfully and rapidly. And, lastly, the more perfect the health, the more actively are all the processes of life performed, and consequently the greater the heat produced. For advice on the promotion of health, I beg to refer the reader to my article on "Beauty-Culture," and to other papers in these columns.

Heat-escape may be lessened by covering the body with a non-conductor, and by raising the temperature of the surrounding atmosphere. Let it be distinctly understood that clothes, of whatever material composed, cannot impart heat. All they can do is to prevent that generated within the body leaving it. They keep us warm in precisely the same way as a sunshade keeps us cool. Some materials do not allow heat to pass so rapidly through them as others, and therefore are said to be warmer. Wool is the best non-conductor of all the articles used for clothing, and persons who feel the cold much should not wear anything else. Paper is also an excellent non-conductor, and may be utilised as such when nothing else is at hand.

An ordinary coal fire, although it looks bright and cheerful, is both a dear and inefficient method of raising the atmospheric temperature, for a great part of the heat goes up the chimney while we roast on one side and shiver with cold on the other. The expense is slightly, but not materially, reduced—at least, so I am informed—by the use of a slow-combustion range. Any range may be made into a slow-combustion one by putting a solid bottom into it, or by placing a shield between the lowest bar and the hearth. Verity's patent gas fire has exactly the appearance of a bright coal fire, but, although a convenient, it is a somewhat costly substitute for it. It consists of lumps of mineral kept at a red heat by gas jets. A good draught is an essential condition, for if there be the least down-draught, the vapours from the gas, which are of a very unwholesome character, will be driven into the room.

All stoves without chimneys are objectionable. Heating the air as it enters a building is the cheapest and best mode of warming it. A single room, or a whole house, may be heated in this way. The apparatus is inexpensive, easily fixed, and may be made to burn coal, gas, petroleum, or any other fuel. The advantages secured are—freedom from draughts; air not burnt, and consequently neither robbed of its oxygen or loaded with the foul products of combustion; an equal, or nearly equal, degree of warmth in every part of the room; great saving of trouble; absence of smoke and dirt; and economy in fuel.

These, then, are the means with which nature has furnished us for resisting cold; and the severities of an arctic winter may be, and have been, endured by their aid. I may here, perhaps, be permitted to observe, although it has no direct connection with my subject, that an extremely high temperature is, to a certain extent, its own remedy, for the excessive perspiration induced by it is attended with a proportionate loss of heat. My next paper will be on the kindred subject of "Colds."

"Lochinvar" Old Scotch Whisky.—For invalids who are ordered whisky, or for those who use this valuable spirit to promote and aid digestion, it is important that the whisky *be well matured by age*. The "Lochinvar" is a blend of the finest Highland whiskies, and is *guaranteed five years old*. Sold by all wine merchants. Wholesale only of Hills & Underwood, Eastcheap, London.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

OUR USEFUL NOTE-BOOK.

"When found, make a note of."—*Captain Cuttle.*

Care of Tooth-Brushes.—If dealers will call the attention of customers to the following rules for the use of brushes, complaint will not be made about their wearing qualities:—*Directions for using tooth-brushes:* Tap the brush before using it, to see if you can jerk out any loose bristles. Tap the brush after using it, to shake out the water, and put it away fairly dry. Do not keep it closely shut up in a brush-tray or dressing-bag bottle. *Cause of Complaint.*—Loose bristles may be found in a new brush in consequence of the wire having cut the bristles in half while drawing them into the hole, the knot being too full. Bristles may project beyond the level of the serge, the knot being too slack; clip them off; do not withdraw them, and thereby make the knot still more slack. Bristles will perish if brushes are put away thoroughly wet, and left for days to get thoroughly dry; after a time, even with the greatest care, this will happen. Brushes will smell offensively if closely shut up when wet; they will also become discoloured. Tooth-brushes will wear out in course of time; some people use them for months, while some will cut them down very quickly, thus:—Teeth with sharp edges cut bristles. Teeth with irregular spaces will catch individual bristles and forcibly withdraw them. Some people select a brush too soft for their requirement, and make it harder by pressure, breaking down the bristles, which they would not do if their brush was sufficiently hard. A tooth-brush being an inexpensive article, it is wiser, therefore, to throw it away before it is thoroughly worn out, than to keep it as an annoyance, which it will be if used too long.

To Clean Ivory.—Rub it with bicarbonate of sodium, applied by means of a tooth-brush dipped in warm water.

Hop Cordial.—The following is recommended as a palatable preparation, not inferior to many of the so-called "Hop-Bitters":—Hops, 2 oz.; dandelion, 2 oz.; gentian, 2 oz.; chamomile, 2 oz.; stillingia, 2 oz.; orange-peel, 2 oz.; alcohol, water, of each, 77 fl. oz.; syrup, simple, 12 fl. oz. Exhaust the solids with the alcohol and water, and add the syrup.

Worcestershire and Holford Sauce.—The exact composition of these is not known. There are several good imitations sold in the market, none of them, however, quite identical with the original. Of course, the method of preparing these is a secret of the manufacturer. A sauce which is said to yield a product resembling the original is prepared as follows:—Mix 1½ gallons of white wine vinegar, 1 gallon walnut catsup, 1 gallon mushroom catsup, 1 gallon madeira, ½ gallon Canton soy, 2½ lb. brown sugar, 19 oz. of salt, 3 oz. of capsicum, 1½ oz. each of pimento, coriander, and curry powder, ¾ oz. each of cloves, mace, and cinnamon, and 6½ drachms of assafœtida made into a tincture, with 1 pint of brandy. Boil 2 lb. of hog's liver for twelve hours in 1 gallon of water, adding water from time to time to keep up the volume. Then bruise and mix the liver thoroughly with the water, and strain through a coarse sieve. Add this to the remainder.

Walnut Catsup.—A good formula is said to be the following:—One-half gallon of walnut juice (obtained by strong pressure, if necessary, after sprinkling the walnuts with a little dilute vinegar) is heated to boiling, the scum removed, and then mixed with 10 oz. of sardelles (with bones), 10 oz. of shallots, ⅓ oz. each of whole cloves, mace, and pepper, and ½ oz. cloves of garlic. The mixture is boiled until the sardelles are disintegrated, strained, allowed to cool, and bottled.

Mushroom Catsup.—This may be made as follows:—Eighteen quarts of canned mushrooms are cut, put into a stone jar, mixed with 10 oz. of salt, and set aside for three days, occasionally stirring with a wooden spoon. The jar is next placed for half-an-hour on a warm stove, the exuded juice then strained off through a coarse strainer, without pressing, and boiled for fifteen minutes. For each quart of juice, there is added ¼ oz. of whole allspice and pepper, 2 pieces of mace, ⅜ oz. each of ginger and cloves, and the mixture set aside to cool. When cold, it is strained and bottled.

To Prevent the Hair Falling Off.—We have been informed that the Linimentum Crinale recommended in "Squire's Companion" is one of the best preparations for this purpose. Its formula is cantharidin, 1 grain; acetic ether ¼ oz.; dissolve, and add rectified spirit, 3 oz.; castor oil, 1 oz.; oil of lavender, 15 minims. Some prescribers order the addition of more spirit. The application to be made with a small sponge every third day. Squire says after applying it a few times the head should be washed, or the application may accumulate and cause too much irritation.

Castor Oil Emulsion.—A correspondent sends the following as a good formula for castor oil emulsion, which he has frequently dispensed; it renders the oil tasteless, and keeps well: Castor oil, 6 drachms; glycerine, 6 drachms; tinct. of orange-peel, 2 drachms; tinct. senegæ, ½ drachm; water, or cinnamon water, to make up, 3 ounces. Dose, one table-spoonful every night.

Cocoanut Hair-Oil.—Cocoanut oil, ½ pint; castor oil, ½ pint; alcohol, 6 pints; slippery elm bark, 1 oz.; water, 4 oz.; oil of bergamot, 1 oz.; oil of lemon, ½ oz.; oil of pimento, ¼ oz.; oil of almonds, 1 dr. The cocoanut oil is mixed with the castor oil, and the alcohol mixed slowly with them at a slight heat. The elm bark in coarse powder is dissolved in the water and strained, and mixed by agitation with the rest. Lastly, it is filtered, perfumed, and coloured with a little tincture of gamboge.

Label Varnish.—One of the best label varnishes is the following:—Sandarac (in coarse powder), 100 parts; mastic, 40 parts; copaiba, 15 parts; Venice turpentine, 30 parts; oil of turpentine, 40 parts; alcohol, 90 parts; absolute alcohol, 90 parts. Macerate until solution is effected.

Angostura Bitters.—Angostura bark, 4 drachms; chamomile flowers, 1 drachm; cardamom seeds, 2 drachms; cinnamon, 2 drachms; orange-peel, 1 drachm; raisins, 1 lb.; diluted alcohol, 2½ gal. Macerate for one month, then press and filter.

Cherry Tooth-Paste.—Boil briskly 1 oz. of potassium carbonate and 1 oz. of powdered cochineal in a pint of water till reduced to 12 oz. or 14 oz. When cold, add cream of tartar, 1 oz.; alum, ½ oz.; glycerine, 2 oz.; and water sufficient to make 16 oz. of filtered solution. Add 4 oz. of honey, and set aside for a few days to see if fermentation occurs. Carefully mix the liquid with 2 lb. of prepared chalk, 1¾ oz. of orris powder, and ¾ oz. of cassia powder.

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION, AND HEALTH.

By B. H. Thwaite, F.C.S., A.M. Inst. C.E., &c.

THIRD PAPER.—HOUSE DRAINAGE ARRANGEMENTS.

The position of the drains in relation to the house cannot be too well considered. The drains should be laid from the house to the main sewer in as direct a line as possible, and all its divergences should be made by means of wide sweeping curves. Acute angled bends often produce the deposition and accumulation of the solid constituents of the sewage, and the drains become in time entirely stopped up.

The proportion of the size of the pipes to the work they have to do should be carefully arranged. There is no advantage in having the drain-pipes too large for the volume of sewage they have to carry away. It will be clearly evident to the reader that when only a single slop-pipe of, say, one inch bore feeds a drain-pipe of, say, nine inches diameter, the quantity of water that would run full bore through the one inch pipe would merely form a thin film of water at the bottom of the drain-pipe, and have comparatively no flushing power; and, in the absence of the latter, it is not surprising that the solid and slimy constituents of the sewage become deposited in the drain, and that the latter very soon becomes stopped up.

Generally, one drain-pipe of three inches diameter of bore is sufficiently large to carry away the waste issuing from three slop sink-pipes. Of course, when one branch drain of, say, three inches in diameter joins another, the size of the latter should be of a size proportionate to the additional sewage it will have to carry away. The author has seen numerous instances where the main drain had only the same sized bore as that of its numerous branches, with the inevitable result that in a short time it (the main drain) became entirely choked up, owing to its incapacity to carry away the sewage poured into it.

The drain-pipe connected to the water-closet soil-pipe should have at least a 4-in. diameter bore. The connections of the branch drains to the main drain leading to the sewer should, if possible, be in the following order:—The bath-water cistern and slop-sink wastes should be the first to join, and the water-closet last. The drain-pipes should be laid with such an inclination or fall as will produce a velocity of the flow of sewage equal to not less than 3 or more than 10 ft. per second. An inclination of $\frac{3}{4}$ of an inch to the foot, or $2\frac{1}{4}$ inches to the yard, produces a satisfactory flow of the sewage. The position of the disconnecting traps, or appliances for preventing the passage of the sewer-gases into the house, deserves the most serious consideration. As near as practicable to the sewer end of the drain, one of these disconnecting-traps with its ventilating pipe should be fixed, but not near a window or door, otherwise the sewer-gases passing from the ventilating pipe may possibly enter the house through them.

Another *ventilated* disconnecting trap should be placed at the bottom, or foot, of the water-closet soil-pipe, but always *outside* the house wall; and this latter remark applies to the *connections* of all household waste-pipes with the drain-pipes. In fact, the following ought to be considered an axiom of household sanitation:—*That no drain should be connected to the household wastes, of whatever description, on the inside wall of the house.*

Except where it is impossible to arrange the drain differently, no drain should pass under the house.

All waste-pipes from slop-sinks, &c., should pass through the house wall, and fall over a ventilated disconnecting gully-trap—which should form the house-side termination of the drain.

The various positions of the drains and their adjuncts having been decided upon, *they should be carefully and accurately marked upon the plan of the house.*

Few owners can show a plan of the drainage of their household property at all, and when any new connections, alterations, or repairs are required to be made, the position of the drains has to be sought for, and in such a case before the drain is found as great an expense has been incurred as would have paid for the alterations, &c.

Every person building a house should insist on having an accurate plan of his drainage arrangements, which ought to be fixed in some position easily accessible to the occupier; by this precaution, much future annoyance and expense would be saved.

The excavation of the trenches for receiving the drains (commencing at the sewer end) should now be proceeded with; and the junction of the drain with the sewer should be made in such a way that the direction of the flow of the sewage in the drain shall be as near as possible identical with that of the main sewer.

After the passing of the Public Health Act of 1848, the use of drain-pipes of earthenware or stoneware became general, but the old and defective rubble-drain system of construction is far from obsolete, and is even now only too commonly used in country places. Earthenware drain-pipes are generally two feet long, and have at one of their ends an enlargment to form a socket to receive the plain end of another pipe.

The following are characteristics which a good drain-pipe should possess:—

It should be perfectly straight, and have a truly concentric bore; be well salt-glazed, and very hard burnt. This latter is a very important quality, and one easily ascertained by applying pressure to one of the pipes; if it is imperfectly burnt, it will crumble to pieces, and its fractured ends will not present that burnt appearance which a good well-burnt pipe ordinarily possesses. Before the pipes are laid in the trench a bed of Portland cement concrete should be laid in the latter to receive them, and the drain-pipes should be *solidly* bedded on the concrete. Pipes are often laid in such a way that the enlarged socket-ends are the only parts solidly bedded. Leaving the straight lengths, or trunks of the pipes, entirely unsupported, it is not surprising that these pipes often col-

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

The "Boncontour" Stay-Belt and other Orthopædic Apparatus, made by K. R. Schramm, Orthopædic Mechanician, 64, Belmont-street, Chalk Farm-road, London, W.—[Advt.]

Prize Medal National Health Society.—Houghton & Co., Practical Plumbers, Inspect and Report on House Drainage. Improvements carried out with all the best and latest inventions. Estimates Free. 21, Sloane-terrace, S.W. Established 1863.—[Advt.]

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

lapse under the superincumbent weight of the earth, &c., over them.

It may be mentioned here that a new description of drain-pipe has lately been introduced into the market by the Farnley Iron Company. This pipe is formed with a solid seat, without any projection of socket beneath it; and by this means a solid bed for the drain-pipe is more easily obtained.

The pipes having been laid with their socket joints at the highest level, or nearest the house end of the drain, the joints may be made good either with well-tempered clay or with Portland cement. A layer of concrete should now be laid entirely over the pipes. This latter precaution is very advantageous, insomuch as, if the joints leak, the concrete will prevent the sewage from escaping into the subsoil; besides, the concrete lining adds considerable strength to that of the pipes. After the concrete lining has become properly set, the earth may be filled in to the trenches. If it is unfortunately necessary for the drain-pipes to pass under the basement of the house—such an arrangement should be avoided—iron pipes may be advantageously used. They are much stronger than those of earthenware; and, as they can be obtained in regular lengths of from 9 to 12 feet, the number of the joints is far less. The joints can be made either with Portland cement or by a mixture of sal-ammoniac, sulphur, and iron filings in the following proportions by weight:—

1 sal ammoniac in powder,
2 flour of sulphur,
80 iron borings made to a paste with water.

Spence's metal may be used, or lead, but the author would not advise the use of the latter, as lead is unquestionably an influential agent in producing corrosion of the iron. The liability of iron pipes to the weakening action of corrosion or rust is certainly a great disadvantage, but it appears that iron does not suffer materially in contact with sewage, probably due to the ammonia present, which will neutralise the corrosive action of the acids which sewage contains. Inasmuch as, that the pipes, if not protected, will on the external sides be subject to the highly-corrosive action of the moisture, arising from the subsoil, they should, before being laid, be coated with some anti-corrosive agent, such as tar, applied as follows:—The iron drain-pipes should be dipped into liquid tar, heated to a temperature of about 500° Fah., and when the pipes have attained the temperature of that of the tar they should be withdrawn. Another admirable plan is to have the pipes coated with magnetic oxide by the Bower-Barff process. The iron drain-pipes should also be bedded in concrete, as described for earthenware drain-pipes.

You cannot eat your cake and have it: you cannot waste your vital force and still keep it for use.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

Murdock's Liquid Food. — Extract from the *Lancet*. — This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—Van Abbott, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Depôt for Brand's (May Fair) Meat Preparations.—[Advt.]

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EDUCATION IN AMERICA.

By D. A. Sargent.

(*From the "North American Review."*)

THIRD PAPER.

In enumerating these four great classes we have not attempted to deal with the exceptional cases. That there are many such cases in every college we are well aware. But our purpose has been to bring out the prevailing characteristics of each class as a body, to show the motives that prompt them to exertion, and to review their efforts in the direction of physical culture. To summarise, we may say that the athletes devote too much time to the development of special powers, and sometimes carry their exercises to excess; that the sporting men rely upon their inheritance, physical and financial, and make no attempt to renew their capital; that the scholars, as a class, take too little exercise; and that the idlers take no exercise at all. When we consider the relative numbers in these several classes in all our colleges, it is safe to conclude that of the whole number of students not more than 10 per cent. give any attention whatever to physical exercise, and that less than 6 per cent. take it systematically as a means of culture and development.* Surely, then, the charge that too much time is given to muscular education in our literary institutions has the slenderest possible foundation in the facts of the case. And it must be evident, too, that the members of college crews and ball nines are not in any proper sense representatives of the physical condition of the average students in their respective institutions. The bane of American college life to-day is the spirit of prize-getting which underlies and inspires the entire system. It is equally powerful in every department of education. It utterly destroys harmony of development. It unduly cultivates a student's powers in one direction, and dwarfs and stunts his growth in every other. The valedictorian has no time for exercise, or is too weary to take it; the champion athlete has no time for study, or is too stupid to begin it. One sits in his room with a wet towel about his head, and conscientiously works out his allotted task; the other stretches himself upon a lounge and has the day's lesson poured into him by admiring comrades. Both are toiling for fame, though in opposite directions. Both have won honours for their Alma Mater; so she gives them the same certificate of acquirements. And as to subsequent usefulness in the world, there is little to choose between them. There needs to be a recognition of the supreme value of unity in education, of the harmonious cultivation of a man's mental, moral, and physical nature. Now we ask, if physical exercise is thought by our college faculties to be of so much importance that they should permit and encourage a certain class of students to devote two, three, and four hours a day to body culture, often to the neglect of their studies, would it not be well, to make some provision for those who are not athletically inclined, but who are more in need of exercise, and to whom, if judiciously applied, it would be of the greatest

* The reader will understand that we are speaking of American colleges as a whole, and that the general interest in physical training among the students of Harvard, Yale, and some others of our larger Eastern institutions is exceptional, and not representative.

benefit? This is to be accomplished only by furnishing every fitting school and every college with a well-equipped gymnasium, by making its exercises a part of the regular curriculum, and by having them executed under the supervision of a competent instructor. By many institutions these requirements have been met in part—that is, one college is provided with a fine gymnasium, another has a good instructor, and a third has made its exercises obligatory. We know of but two or three institutions in the country where all these advantages are combined. The gymnasium is, and has been since the days of ancient Greece, the great school of physical education. All its appliances were invented for that purpose. And as gymnasiums are used to-day, why are they not a success? Simply because they do not accomplish the object for which they were established: they fail to give every man who has access to them a complete and thorough physical training. But this is not the fault of the gymnasium in itself. Let us look at the building and the apparatus provided by some of our colleges, then at the manner of conducting the exercises, and then inquire as to the character and ability of the men who have charge of the gymnastic department and the principles upon which they are appointed. We shall doubtless find that the want of interest has not been wholly due to the obstinacy of students, but that the fault may be traced back, directly or indirectly, to the faculty or the boards of trustees and overseers.

A gentleman gives forty or fifty thousand dollars for the erection of a gymnasium. The planning is handed over to an architect who has no idea of the kind of building required, but who feels it his duty to get up something that will at least be an ornament to the campus. He generally succeeds in doing this, and the donor and the corporation are satisfied. But what can be said of the structure, as to its fitness for a temple of health? It is a building eighty feet long and half as many wide, poorly lighted, heated, and ventilated. The bath-rooms are on one floor, and the dressing-rooms in the attic or cellar. The walls, roughly finished in brick or granite, are frescoed with dust in the summer and with frost in the winter. The floor is made of spruce, and its seams are filled with gravel. In fact, incongruity and unfitness meet us on every side and in almost every detail. Why should this be so, when the amount of money contributed is large enough to meet all demands, and the ground space allotted is ample? Because the architects and builders employed do not know the requirements of a good gymnasium, and seldom seek the advice of those who have practised gymnastics for years, and have made a life-study of the subject. The result is an edifice not adapted to the work for which it was designed. Exceptions should be made of the finely-constructed gymnasiums at Harvard and Princeton; nor would we judge too sternly those institutions which have been obliged to remodel an old building in order to have any gymnasium at all.

TEACHING LANGUAGE TO BRUTES.

"L. B." writes to *Science* as follows:—Is it not quite conceivable that some of the lower animals might be taught to use human language rationally? No doubt the reasons for a first hasty answer in the affirmative would be that the animals seem so intelligent as sometimes even to reason, and that they have, in fact, often had human words put into their mouths, and that they seem sometimes to have a language among themselves. Yet, after all, cannot their intelligence, and even wisdom, and occasional apparent reasoning, be satisfactorily explained, without attributing to them true reasoning, as the result of hundreds or thousands of generations of experience and transmitted memory, by which certain objects or actions become associated with a feeling of pleasure or pain that induces pursuit or avoidance? How few, indeed, are the cases that cannot readily be so explained, where an animal appears at first sight to exercise a reasoning power, and how extremely simple the effort seems then to be!

True reasoning can always be reduced to the syllogistic form, in effect a statement that what is true of a class is true of something in that class. In order, then, to reason, properly speaking, it is necessary to use a general term (a word or sign with the meaning of a common noun) to indicate the class; and, as we do not know of any evidence that brutes have such words or signs, we have no proof that they can reason. In like manner, the lack of evidence that they can reason goes far towards showing that they have no language that includes such general terms, though it may be true that they sometimes understand words in a singular (not general) sense, and have similar expressions for their own feelings.

The question, then, is whether brutes may not be taught the intelligent use of general words or common nouns, which would enable them to reason. As the step does not seem so very enormous from the undeniable intelligence of some brutes to the lowest form of generalisation, it is perhaps worth while to consider how they might possibly be taught to take the step, in hope that, having once taken it, they might be led farther with still greater ease. Since the idea of plurality appears to lie at the very bottom of the idea of class, number would perhaps be the first and simplest step in generalising,—number, that is, the regarding things merely as individuals or units. It is a step beyond, to regard things as alike in more complex respects. If that is so, the first effort might be made to teach how to count, and, of course, at the beginning only to count up to two. If that can be accomplished, still further counting can unquestionably be taught, and no doubt by degrees a much greater amount of generalisation and reasoning itself. Does it seem impossible that a brute may learn to associate invariably the word "one" with a single object, and "two" with a pair of objects, no matter of what kind? At first the two objects should always be two like ones; but by degrees a difference in them might be allowed. The teaching of common names might next be taken up; or it might be begun along with the counting, but without the confusing addition of any plural termination. Even if the mere counting up to two could not be taught successfully to any single individual brute, yet the end might nevertheless be attained, perhaps, in several generations.

The question then comes, With what animal would it be best to begin such experiments,—whether with monkeys, or elephants, or birds, or ants? Of course, articulation is not essential; for a language of signs might be devised suitable to the animal—a language corresponding to the deaf-and-dumb one of signs, or to one using the Morse alphabet, or something like it. Elephants are very intelligent, but so very long-lived that it would take ages to observe the effect of training through many successive generations. Perhaps the convenience of excellent articulation and rapid propagation, both combined with apparently good intelligence, might give the preference, on the whole, to a talking bird, such as the Indian mynah.

In nine cases in ten a bad temper is a sign of disease. As a rule, healthy people are cheerful and good-natured.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

Energy in Nature; Being, with some Additions, the Substance of a Course of Six Lectures upon the Forces of Nature, and their Mutual Relations. By Wm. Lant Carpenter, B.A., B.Sc., &c. (Cassell & Co., Limited.) 1883.

Mr. W. Lant Carpenter (whose articles on "Electrical Appliances" are well known to the readers of Health), has done a wise and acceptable thing in bringing together, into volume-form, the substance of the lectures on physical science he has delivered under the auspices of the "Gilchrist Trust." The lectures, which thus form the substance of this book, deal with some of the weighty problems of matter and force, and, indeed, may be said to lead us into the very arcanum of Nature's secret ways and works. A great good, in an educational sense, is accomplished by works of which the present volume is an example. In the first place, the information dispensed is of sound character. The author's statements may be relied upon as explanatory of that which actually exists, and which has been demonstrated. In the second place, the information is conveyed in a clear and terse style, such as only the true teacher can attain. But in the third place, the inferences and deductions from the facts detailed are likely, in the hands of such an author, to be safe and reasonable, and to represent neither overdrawn conclusions on the one hand, nor prepossessed ideas on the other. We have closed Mr. Carpenter's book with feelings of the liveliest satisfaction. He has admirably succeeded in conveying his readers through the great fields of matter and force, and even of life itself; acting as their guide and counsellor, pointing out the lessons to be drawn from the study of the material universe around us, and enabling his readers to gain broad and enlightened views of the constitution and order of nature. Now, all this information represents a positive educational gain of no mean kind. Few of us know much, after all, about the world in which we live; still fewer comprehend what is meant by such terms as "force" and "energy." Yet, that the appreciation of such details should form the basis and groundwork of ordinary education and of an intelligent knowledge of "the world we live in," no teacher will deny. As a text-book of physical science in its elementary aspects, and as a safe guide, and a pleasant one withal, to a knowledge of the forces which work out the ways and laws of nature, Mr. Carpenter's volume may, at the outset, be heartily commended to all aspiring minds, ready to learn and eager to know.

We cannot pretend, in the pages of a journal like Health, to give an exhaustive account of the fields of research into which Mr. Carpenter leads us. But the topics of which he treats possess, at the same time, many points of contact with health-matters. People will not interest themselves in health-matters who do not feel kindly-disposed towards science at large; and there are, besides, many and direct ways in which health-laws and physical science become interwoven. Thus, a knowledge of chemistry is a *sine quâ non* for successful health-reform. We must know something of the behaviour of gases under various conditions, in order to secure ourselves against the effects of bad or defective drainage; and we must certainly possess an intelligent conception of the physics of the air before we can hope to understand the function of breathing. The broad elements of the sciences which deal with the matter of the world, and its disposition and behaviour under varying conditions, are lucidly detailed in the volume before us; and in this latter aspect it is, therefore, a volume which may very profitably be studied by young and old alike.

In the purely physical details of his work the author deals with such subjects as "Matter and Motion," "Heat," "Chemical Attraction," "Electricity," and "Magnetism." Each of these heads is duly illustrated—a word of praise must be bestowed on the number and clearness of the wood-cuts with which the pages of the volume are illustrated—and everywhere the author's first endeavour appears to have been that of making the most abstruse facts clear and

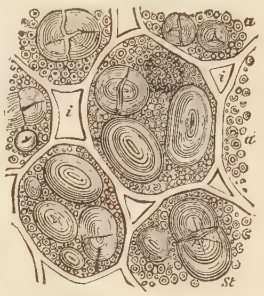

Fig. 1.

plain by abundant detail, and through references to other and well-known sources of information. The chapters on "Electricity" strike us as being models of clear and lucid writing. No one reading these sections of the book can rise from their perusal without gaining a sound knowledge of the interesting facts relating to the curious phenomena with which they deal. The quackery which is rampant in electrical matters has been abundantly illustrated in our pages; and there is little need to point out that it is on the supreme ignorance of the public, in respect of electrical science, that the quacks, who offer their so-called "electric" and "magnetic" appliances for sale, flourish and thrive. No more interesting study in physical science presents itself to the inquiring mind than the subject of electricity and magnetism. Those who wish for full details respecting electricity, not

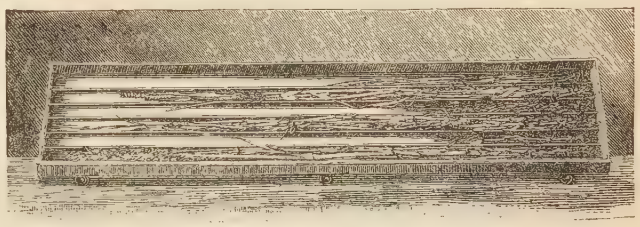

Fig. 2.

only in its more abstruse applications, but in its practical aspects as applied to telegraphy, electric lighting, &c., will find in Mr. Carpenter's pages all the information they can desire.

The section of this work dealing with "Energy in Organic (or living) Nature" (p. 172), brings us face to face with the deepest problems of nature in the shape of the nature of life and the ways and works of animated beings. The living germ, absorbing matter or food from the outer world, converts this matter into its own substance, and grows and increases, while it also discharges, through the energy, or "power of doing work" it derives from its food, the ability to perform all the actions of its life. The higher plant, for example, makes and stores up starch in its cells (Fig. 1), the starch granules being shown at *st* in the figure, while

oil globules are seen at *a*. Again, through the *chlorophyll* or green colour of other cells, or possibly, as recent researches show, through the *protoplasm* or living matter of the cells in conjunction with the green matter, the plant splits the carbonic acid gas into its carbon and oxygen, retains the carbon for food, and sets free the oxygen into the atmosphere. The influence of the electric light on vegetable growth, as shown by the late Sir W. Siemens, is also duly alluded to by Mr. Carpenter. "In November, 1881," he tells us, "two plots of precisely similar ground on Sir W. Siemens' farm were sown with oats, wheat, and barley, the same seed being used in each case. One plot was not interfered with in any way; the other was lighted by the electric light from sunset to sunrise, until May, 1882, when ears were cut from each plot. The figure (Fig. 2) from a photograph kindly permitted by Sir W. Siemens, shows the result in each case. The three long ears were from the portion electrically lighted at night, the three short ears in the other; the difference is greatest in the case of the oats, and least in that of the wheat. A very remarkable feature in these experiments, first pointed out by Sir W. Thomson, and fully

Fig. 3.

confirmed by Sir W. Siemens, is, that no artificial light will affect this decomposition of carbonic acid in growing plants unless the temperature of the source from which it comes is above that necessary for the dissociation of carbonic acid, namely, 4,000° Fahr. The electric light is, as yet, the only artificial light that fulfils these conditions. Another inference from the experiment is, that the period of rest, hitherto considered necessary for plants during their growth, is not nearly so essential to them as was generally supposed."

No less interesting are Mr. Carpenter's words when he points out how the storage of solar energy or that of the sun is witnessed in the block of coal, wherewith we heat our rooms. From curious plants related to the little "horse-tails," or *Equisetæ* (Fig. 3) of our ditches, but exceeding these plants many hundred times in size—and from other forms of vegetable life now extinct, coal has been found in the laboratories of the earth; and an examination of "the contents of a coal-bed" (seen in Fig. 4), where the stems, &c., of the plants are cut across, clearly shows us the exact nature of the fuel we burn to-day. George Stephenson, the railway pioneer, enunciated a great truth when he spoke of the sun's light "bottled up" in the earth, driving his engines, and giving to man the means of employing the giant Steam.

Some interesting details concerning "foods," and the energy they are capable of generating within our bodies, is given at the close of the volume. Dr. Frankland showed that the amount and cost of food necessary to be completely oxidised (or used up) in our bodies to raise a

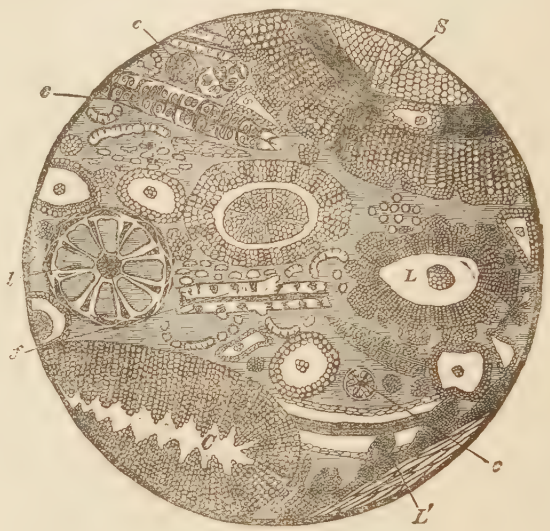

Fig. 4.

man's weight (140 lbs.) 10,000 feet high, might be thus tabulated :—

	lbs.	Price per lb.	Cost.
Bread	2·345	0s. 1½d.	0s. 3½d.
Oatmeal	1·281	0 2½	0 3½
Potatoes	5·068	0 1	0 5¼
Beef fat	0·555	0 10	0 5¼
Cheese	1·156	0 10	0 11½
Butter	0·693	1 6	1 0½
Lean beef	3·532	1 0	3 6½
Pale ale	9 bottles	0 6	4 6

The *real* values of foods in relation to work is thus shown; but the above estimate takes into consideration the full oxidation and use, and proper digestion of the foods in question.

The dietary for an adult man per day is also given by Mr. Carpenter; about 4,000 grains of carbon and 300 grains of nitrogen are required. The following dietary represents these quantities :—

	ozs.
Bread	18
Butter	1
Milk	4
Bacon	2
Potatoes	8
Cabbage	6
Cheese	3¼
Sugar	1
Salt	¾
Water alone, and in tea, coffee, beer, &c.	66¼
Total	6 lbs. 14¼ ozs.

No volume we have recently seen contains such a rich storehouse of facts concerning every department of Nature, and no better gift-book can be placed in the hands of young people, than that under review. "Children of a larger growth" it is needless to say, will likewise find its pages to teem with instruction.

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Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only. The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

HEALTH AND EDUCATION.

Sir,—As an instance of the enormity of the evil nowadays of girls' education I send you the following facts, which are within my own knowledge. During the annual examination which has lately taken place, one of the girls (at the school to which my three sisters go) one night worked up her next day's subjects till 11 o'clock, got up at half past four in the morning, and during the short time she allowed herself for rest (viz., 5½ hours) she actually rose three times to see if it was time to dress and go down to work. If the health of our girls is so wickedly neglected, what kind of issue shall we see flourishing in the next generation? I may also add that I have just lost a sister from brain fever, caused by her working terribly hard for the London Matriculation for five months—which she passed first class—she was only 17 years old.

I remain, Sir, yours truly, Common Sense.

NAVVY WORK AND SCHOOL.

Dear Sir,—As "navvy" work is, I fancy, not thought of in most schools, I should like to point out what a valuable help to physical training this can be made. Too much time given up to any one game makes boys, except the enthusiasts, tired of it. Constant change is necessary for young people, and an hour or two every week at pick, shovel, and barrow is taken to kindly by many boys. A boy will leave his classics and pitch into this rough work, as he does into football, with the greatest benefit to his body and mind. The use of the pick is most popular, and to give up this tool for the barrow is a capital lesson in unselfishness. A glance at a party of boys engaged in this work is interesting; earnestness, selfishness, idleness, and their opposites can all be seen. Surely, here is a chance for the schoolmaster to study character. Indirectly, too, this work being learnt by gentlemen's sons, must have an elevating effect on the labouring man, who sees that his own hard work is not despised. The repairing of tools opens out further work for the schoolboy carpenter and blacksmith. We ought to be more practical than we are, out of school.—Yours faithfully,

E. F. T. Bennett.

QUERIES AND ANSWERS.

[We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*]

[Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

[We beg to announce to our correspondents that, save in exceptional cases, or where addresses of medical men, &c., are desired, we cannot reply to inquiries by letter.]

[Owing to the necessity for our going to press early in Christmas week, we must ask the kind indulgence of those correspondents whose "Queries" wait for reply. These "Queries" will be answered in our next number.]

["General" answers have been crowded out of this issue.]

SANITARY.

Annoyed Householder.—You have no legal remedy, we believe. Consult your solicitor.

George Caird.—The "Wash-out" is, in our opinion, a good closet. Read articles on "Closets," by Mr. Munday, in recent numbers of Health.

Alexis.—1. Manuscript to hand. Many thanks. 2. The soil-pipe is evidently at fault. Have it seen to. The "cesspool nuisance" may be present in your case also.

Oxley.—We believe not. Try "Sanitas" fluid and powder.

Eliza M.—Corfield's "Laws of Health," Longmans (1s. 6d.) should suit you, or Galton's "Healthy Dwellings" (Macmillan). Parke's "Hygiene" is too voluminous for your purpose.

Andrew Fairbairn.—Use "Griffith's Patent White." It is reliable and safe, and is a white zinc pigment of good standing nature. Lead poisoning is unknown where it is used. Address Messrs. Griffiths & Berdoe, Liverpool, the makers.

Cool.—A difficult problem to solve. Are your outlets not too high? Shift them, experimentally, 3 ft. lower, and you may cure the evil.

Alexander Orr.—The deposit should be analysed. Possibly it is entirely due to water-sediment, but we have never heard of such a case, and the matter demands chemical investigation.

S. N. Glass.—The near proximity of a w. c. to a bedroom is never desirable. If thoroughly trapped and drains secure no harm can result, but in very few cases are w. c.'s properly constructed, and under the circumstances we should advise you, at all risks, to shift your quarters. Sewage and drain gases will penetrate easily through floors and partitions such as you describe.

MEDICAL.

Mesdames.—Guard against all cold and chill; let the child's food be generous; clothe it warmly in flannel; give plenty of cream and rich milk; and if the ear-troubles supervene again, give hot baths and apply poppyhead fomentations or a hot, roasted fig (as a kind of poultice) to the ear. No medicines will be required unless fever continues high, when the doctor should be called in. The attack was one of earache.

T. J.—See advice to "Anxious," in Health No. 37.

G. A. M.—No remedy, so far as we know, for such a disease. Try paring the nails down as far as can be done without pain. That is your only chance of stimulating their growth.

Victor.—1. Yes; cold sponge bath each morning, if it can be borne. 2. About an hour before meals for the tonic. 3. Yes; perfectly consistent with health, if not too frequent. 4. Persevere with general health care, and you will soon be well. A cheerful frame of mind greatly assists the cure.

False Eyes.—The redness of eyes of which you complain is simply an indication of lowness of your general health and overstrain. Whatever tends to rest eyes and body, and to make your

general health good, will cure your eye troubles. Bathe the eyes with luke-warm water at night and cold water in the morning. Glasses should be resorted to if your sight fails.

Torpid.—Pressure of some kind or other on the nerves and vessels causes the feeling of "going to sleep" in a limb. If you cross one leg over the other, the compression of blood-vessels tends to produce this condition. No disease is necessarily present. See to the warmth of your feet and body generally.

Respice Finem.—Try the tonic for a time recommended to "Anxious," in Health No. 37, and let us hear how you are. No need, from your description, to feel alarmed. See that you rest as much as possible.

Lily.—Try Thomson's "Cod-liver Oil Cream" (Dublin-street, Edinburgh—advertised in Health) as a pleasant and agreeable form of taking the oil. You should persevere with this treatment, as you certainly require such medicine.

Transplanting.—No such successful plan is known. Don't attempt it. Get good false teeth on gold (vulcanite is "cheap and nasty"), and you will not complain of further troubles.

H. Rose.—Read Dr. Pratt's "Sermon to Young Men" (Baillière, Tindall, & Cox, London), advertised in our columns. Glad to hear our advice did you good.

Pysche.—A case for medical consultation. The symptoms are those apparently of dropsy or of some allied disorder. Have a good medical opinion, as much may be done to relieve such symptoms.

Lex.—Wear a suspensory-bandage, and bathe the parts morning and night in cold water. Drink plenty of potash-water for the other affection, and avoid all stimulants. You possibly require a little rest.

Worried.—See advice to "Anxious" in Health No. 37, and write again if not improved. No need to be "worried."

Anxious One.—No; not an absolute guarantee, for cases occur now and then in which the unexpected result happens under such circumstances. The signs and symptoms to which you allude may be absent apparently and yet the result may occur. As a rule, what you state is correct, but there is no absolute law.

Desideratum.—Yes; the hot sea baths would do good. You clothe much too lightly. You must have plenty of flannel, otherwise you will never be well.

F. W. D.—1. Yes; the habit of sleeping in a day-shirt is a dirt habit and prejudicial to health. No cleanly person does such a thing. The skin secretions in such a case become loaded, and you possibly don't take a daily bath. If you value health, practise cleanliness above all things. 2. Hot-water bottles are not to be commended. Rather wear socks in bed (and change them frequently).

T. A. M.—Try a little "Pepsine" with your food. The "specks" are mere symptoms of lowness of body. A change of air and a little rest would evidently do you more good than medicine. We can only repeat that you must persevere in our former advice. Above all, don't get low-spirited.

J'ai Bonne Espérance.—You must alter your mode of life in so far as to discover which foods are disagreeing with you. Your troubles are all of a digestive nature, and you must look to the state of your stomach. See advice to "T. A. M." above. Use a little Vaseline for the itching, but your cure lies in attention to diet. Above all, rest after food. Write again if not better.

Zebedee.—Any bracing (but not cold) seaside place will suit a scrofulous case. The south coast presents many such places—Eastbourne, Hastings, Ramsgate, and Margate (if not too cold). Even Penzance is mild and adapted for such, and living is cheap.

Blackstone.—Try the lime pills ordered to "Ninon" in No. 37 of Health, and write again if not improved. Give up tea for a time.

F. N. Jeeves,—No addressed envelope was enclosed in your letter. If one is sent, we shall most gladly comply with your request.

J. B. X.—If you attended to our directions to correspondents, you would see that we cannot (on account of press-arrangements) reply to letters in the same week as that in which they are received. You were replied to in No. 37 of Health. If not fully answered there, write again. We do not preserve letters.

Nimrod.—We think there has been congestion of the liver, as your description is clear and lucid enough; but as regards the kidney-affection, we are unable to say anything. The probability is, however, that all your symptoms really arise from digestive disorder, in which the liver-trouble may play the chief part. We should advise a consultation with, and examination by, a competent authority; and, if desired, we shall be glad (on receipt of a stamped addressed envelope) to send you the name of a trustworthy adviser in London. A personal examination is a necessity in a case like yours.

Gus. D.—Don't be over-sensitive. There will always be a number of impudent persons in the world, who will pass remarks; and our advice to you is not to trouble with depilatories, which, in your case, would never be satisfactory in their action, and cause more trouble than all they are worth.

Buda Pesth.—As we thought—the "institution" won't be drawn into giving the names of its medical advisers. If honest and above-board let them give you the names you want, otherwise you cannot be assured of the qualifications of their "medical officers."

F. W. G.—Try Morson's "Pepsine" with your food; and you might also give the inhalation recommended to "Mignon," in No. 35 Health. Let us hear again how you are.

R. Parr.—Try the effect of cold douches, and of painting the parts with tincture of iodine.

Champion.—Try the effect of lighter food, and of avoiding all stimulants. Is your work excessive or not? See to this. Possibly you may require more open-air exercise. Tulloch's Pure Dutch Cocoa is a good brand.

Invalidus.—Yes. You should give the tonic you name a trial, or try the effect of 10 drops of *Fer Bravais* in water, thrice daily. Morson's "Pepsine" along with your food is also to be recommended. Don't try any "water-cures,"—they are of no use in your case, which is one for judicious dieting and careful watching. The vegetarian diet is probably too poor for your case. If you care to try the dyspepsia cure we have recommended in many cases, you may—it is this: to live for a time almost wholly on milk, liquid foods (Brand's soups, beef essence, &c.,), and thus restore tone to the stomach by giving it rest. Glad to advise further, if need be.

H. Townsend.—See (and follow) advice to "Anxious," in No. 37 Health. The person you name is a qualified medical man; but we know nothing of him, save that he advertises, and such a practice is incompatible with the ideas and ethics of the medical profession. Don't despair, but follow our advice; be cheerful, and write again if not cured.

Perplexed.—1. We do not approve of dipping the head in cold water every morning. In many persons it causes headaches. 2. No accounting for what you name. Try a bath at a lower temperature. 3. Avoid all stimulants in diet; give up tea and coffee; and attend carefully to digestion. You might try the lime pills prescribed to "Ninon" in No. 37 Health. 4. Hot water increases liability to skin-chill. Give up the hot water, and try tepid water or cold.

Wellwisher.—Warts are thickenings of the skin-surface, and indicate some abnormality of growth. Causes vary greatly. Try touching them with glacial acetic acid; but do not allow the acid to touch the skin at all.

Floating Feather.—You should try to be less nervous. See to your general health—this is the best advice we can give you. Rest for the eyes is, of course, necessary. But your troubles will be lessened if you can succeed in being less nervous. Try the tonic recommended to "Anxious" in Health, No. 37.

G. Harrington.—See (and follow) advice to "Anxious" in No. 37 Health. Don't take supper at all, if you can possibly avoid it. Be cheerful, and try to follow advice given as directed.

R. Warden.—Try the effect of warm baths occasionally, in the water of which a little bicarbonate of soda has been dissolved. Look to your food; the itching arises from some irregularity in your food. Take "Æsculap Water" as a mild aperient occasionally in the mornings, and let us hear how you are.

"E. M.," Grenock.—No "cure" for wrinkles is known to us. There is no altering the contour of the face produced by muscular contraction.

C. Cleveland.—1. There is such an institution conducted by Mr. Van Praagh, 11, Fitzroy-square, London. 2. Fellow's "Syrup of the Hypophosphites"; a teaspoonful thrice daily in a wineglassful of water before food.

Greaves.—Try judicious dumb-bell exercise and graduated trapeze or bar exercise at a gymnasium; and sponge the chest with cold water, and use with friction each morning.

X. Y. Z.—"Æsculap Water" in the mornings as a mild aperient; care and attention to diet, which, for a time, should be very slight but nourishing, milk, light-boiled eggs, puddings, soups, &c. No stimulants. Write again if not improved.

Elaine.—You might try the inhalations recommended to "Mignon," in No. 35, Health, when the cough is troublesome. Sponge the chest with cold water each morning, and use brisk friction thereafter; and begin a course of cod-liver oil or cod oil emulsion, through the winter. Clothe warmly. Yours is only a case for care and attention to the general health, as just directed.

Anthony.—You are evidently excited and over-nervous. Try not to be so; there is really no cause or need for despondency. Read and follow advice given to "Anxious" in No. 37, Health, and let us hear how you are in a week or two. The tonic there recommended will do you good. We shall gladly recommend a physician to you (on receipt of stamped addressed envelope) if our advice

[*Continued on page* 208.

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Battle.—1. Possibly wax is the cause. Drop some glycerine into the ear over night to soften the wax, then syringe in the morning, and avoid cold thereafter. If the boy has had fever of any kind, and if there is any discharge from the ear, take him to a surgeon. He may be the better if cod-liver oil (thrice daily), to which syrup of iodide of iron has been added by your druggist. See, by all means, to his teeth. 2. Depends on the kind of the "worms."

Miseramus.—Keep the part clean; wash frequently with soap and tepid water, and thereafter rub in a little pure Vaseline. If not better in a week or two, write again. Don't irritate the lip by applications such as you have been applying.

Cathcart.—Take for a time the tonic above recommended to "C. Cleveland." See to the ventilation of your premises; abstain from all stimulants, and take moderate open-air exercise. If not improved, write again.

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A Future M.R.C.S.—1. Dyspeptic troubles are the cause. See to your diet. Avoid vegetables for a time; eat slowly, and rest after food. 2. Not necessarily; thirst depends largely on the amount of bodily work, etc. 3. Possibly a strained muscle. Give up the exercise entirely for a time and take complete rest. Cold douche and brisk friction thereafter may do good.

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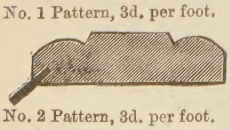

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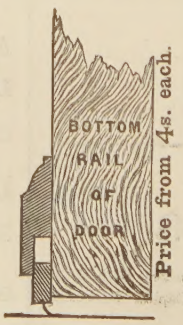

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